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NEA NATL. AGRICULTURAL TR.  
CURRENT SERIAL REPORT  
BILTMVILLY, 'D. 20705

U. S. DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE  
**WATER SUPPLY OUTLOOK**  
**FOR**  
**MONTANA**

and  
FEDERAL-STATE-PRIVATE COOPERATIVE SNOW SURVEYS  
Collaborating with  
MONTANA AGRICULTURAL EXPERIMENT STATION

AS OF  
**JUNE 1, 1979**



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P.O. Box 98  
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**RESERVOIR STORAGE (Thousand Acre Feet) END OF MONTH**

Basin or Stream	RESERVOIR	Usable Capacity	Usable Storage		
			This Year	Last Year	Average
COLUMBIA					
Kootenai	Kootenai	5,694.0	3,551.0	3,206.0	-
Flathead	Hungry Horse	3,428.0	2,927.0	2,580.0	2,639.0
	Flathead Lake	1,791.0	1,527.0	1,473.0	1,481.0
	Camas (4)	45.2	29.9	17.2	36.3
	Mission Valley (8)	100.3	98.4	94.8	63.7
Clark Fork	Georgetown Lake	31.0	28.7	27.5	25.6
	Lower Willow Creek	4.9	4.8	4.9	4.1
	Nevada Creek	12.6	12.9		12.1
	Noxon Rapids	334.6	325.7	266.3	243.9
Bitterroot	Painted Rocks	31.7	33.3	33.0	32.4
	Como	34.9			29.1
MISSOURI					
Beaverhead	Lima	84.0	64.9	70.6	60.2
	Clark Canyon	257.2	187.1	182.7	149.5
Ruby	Ruby	38.8			37.7
Madison	Hebgen Lake	377.5	250.6	226.1	287.1
	Ennis Lake	41.0	35.1	37.1	35.8
Gallatin	Middle Creek	8.0	7.3	7.2	7.0
Missouri	Canyon Ferry	2,043.0	1733.0	1,704.0	1,652.0
	Hauser & Helena	61.9	62.5	63.0	57.9
	Lake Helena	10.4	10.7	10.9	9.1
	Holter Lake	81.9	76.3	74.7	73.7
	Fort Peck Lake	18,910.0	18,170.0	17,640.0	13,920.0
Smith	Smith River	10.6	11.6		10.8
	Newman Creek	12.4	9.9	10.1	-
Musselshell	Bair	7.0	7.1		6.7
	Martinsdale	23.1	14.3		16.6
	Deadman's Basin	72.2			57.0
Sun	Gibson	99.0	84.3	77.3	92.8
	Willow Creek	32.2	30.4	22.8	28.1
	Pishkun	32.0	30.0	31.7	28.8
Marias	Lower Two Medicine	11.9		12.4	-
	Four Horns	19.2		11.6	-
	Swift	30.0	27.5	11.1	27.7
	Lake Frances	111.9	104.4	75.2	94.6
Milk	Elwell (Tiber)	1,347.0	666.8	598.7	691.1
	Beaver Creek	3.5	3.3	3.3	-
	Fresno	127.2	127.5	118.5	101.1
	Nelson	66.8	54.7	40.6	46.3
HUDSON BAY					
St. Mary's	Lake Sherburne	66.2	30.6	48.7	29.7
YELLOWSTONE					
Stillwater	Mystic Lake	21.0	6.1	5.6	6.0
Clark's Fork	Cooney	27.4	19.5		17.3
Tongue	Tongue River	68.0	38.5	66.7	40.8
Bighorn	Bighorn Lake	1,356.0	982.7	1,098.0	810.3

Average based on 1958-72 period.

UNITED STATES DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE  
P.O. Box 98  
BOZEMAN, MONTANA 59715  
OFFICIAL BUSINESS  
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**STREAMFLOW FORECASTS**

Most streams in the Columbia and Missouri River drainages reached their peak snowmelt runoff in late May.

Snowmelt records indicate the Gallatin River and most Yellowstone River tributaries should reach their snowmelt peak between the 10th and 20th of June. If June precipitation is below average, streamflow volumes will be a little less than was forecasted on May 1.

**MOUNTAIN SNOWPACK**

Mountain precipitation for May was below average in most areas.

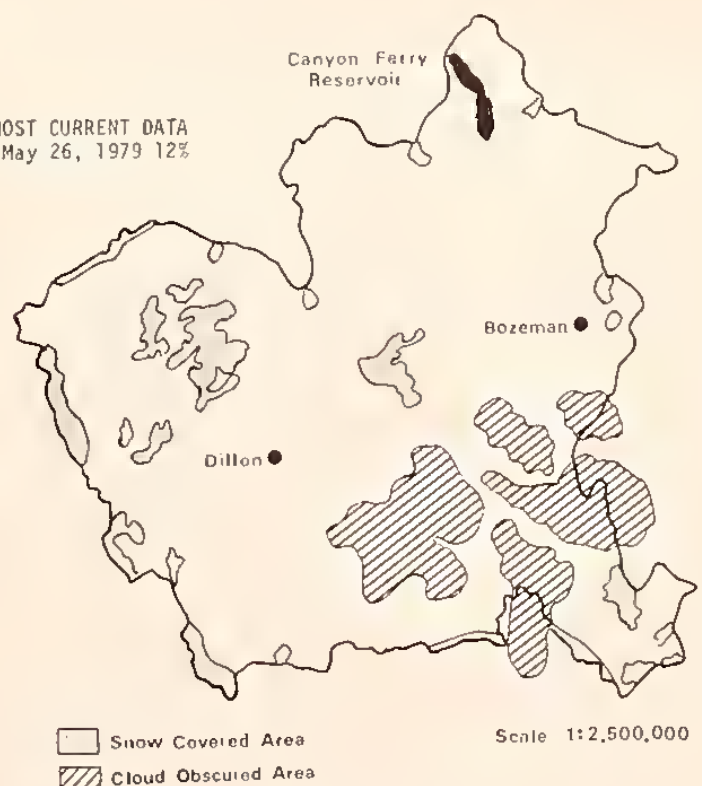
The high elevations have a below average snowpack for June 1 with snowmelt progressing at a near normal rate.

**SATELLITE SNOW COVER**

The snow cover determined by computer from satellite imagery is used to evaluate areas where snow is still present. By computing the area-elevation relationship for the basin above Canyon Ferry Reservoir, the snow cover can be used to estimate the average snowline elevation within the drainage. In this report the average snowline elevation has been estimated

for each snow cover observation. Care must be taken when attempting to determine the snowline elevation for a specific area, since there are differences in exposure, snowfall, and temperature from one mountain range to another. However, the average snowline elevation does represent the progress of snowmelt over the basin in general.

MOST CURRENT DATA  
May 26, 1979 12%



**MISSOURI RIVER BASIN**  
Above  
Canyon Ferry Dam

DATA PROVIDED BY NOAA/NESS

DATE	PERCENT SNOW COVER	AVERAGE SNOWLINE ELEVATION IN FEET	DATE	PERCENT SNOW COVER	AVERAGE SNOWLINE ELEVATION IN FEET
November 1, 1978	9	8600	March 2, 1979	100	3800
November 14, 1978	98	4100	March 8, 1979	95	4400
December 6, 1978	100	3800	March 11, 1979	85	5100
December 10, 1978	100	3800	March 14, 1979	76	5500
December 19, 1978	100	3800	March 20, 1979	82	5200
January 1, 1979	100	3800	March 24, 1979	76	5500
January 8, 1979	100	3800	April 5, 1979	64	6100
January 14, 1979	100	3800	April 8, 1979	68	5900
January 23, 1979	100	3800	April 28, 1979	52	6600
January 29, 1979	100	3800	May 3, 1979	48	6700
February 4, 1979	100	3800	May 19, 1979	24	7700
February 20, 1979	98	4100	May 26, 1979	12E	8350
February 27, 1979	96	4300			



# SNOW SURVEY DATA

SNOW	DRAINAGE BASIN and SNOW COURSE	Elevation	Date of Survey	THIS YEAR		PAST RECORD	
				Snow Depth (Inches)	Water Content (Inches)	Water Content (Inches)	Average
ARCTIC FALLS		7350	5/11	23	6.6	11.0	10.2
BALCON PASS		6900	5/27	67	34.1	37.8	41.3
BALCON PASS		5700	5/29	57	29.5	43.4	46.6
BANFIELD MOUNTAIN		5600	5/31	0	.0	4.4	7.6
BANFIELD MOUNTAIN PILLW		5600	5/31	SP	.4	1.7	4.2
BATTLE RIDGE		6020	6/01	0	.0	.0	-
BEAGLE SPRINGS		8850	6/01	0*	1.0	-	-
BEAGLE SPRINGS PILLW		8850	6/01	SP	.5	-	-
BIG COULEE		5100	5/31	0	.0	.0	.5
BIG CREEK		6750	6/01	85	45.3	50.2	44.3
BLACK LEAF		7950	6/01	0*	23.0	36.0	36.0
BLACK PEAR PILLW		7590	6/01	SP	22.8	33.5	30.1
BLACK PINE		7100	5/31	2	.6	5.4	4.1
BLACK PINE PILLW		7100	5/31	SP	.5	10.1	4.4
BLOODY DICK		7600	6/01	0*	.0	-	-
BLOODY DICK PILLW		7600	6/01	SP	.0	1.6	-
BLUE LAKE		5900	5/27	23	10.4	11.6	14.7
BOULDER MOUNTAIN		7950	6/01	0*	13.0	-	-
BOULDER MOUNTAIN PILLW		7950	6/01	SP	13.5	-	-
BOX CANYON		6670	6/01	0*	.0	-	-
BOX CANYON PILLW		6670	6/01	SP	.0	-	-
BRIDGE BOUL		7250	6/01	42	19.2	26.8	23.6
BRIDGE BOUL PILLW		7250	6/01	SP	13.2	25.7	19.8
BROWN CREEK		3900	5/31	0	.0	.0	.0
CALVERT CREEK		6450	6/01	0*	.0	.0	-
CALVERT CREEK PILLW		6450	6/01	SP	.0	.0	-
CEDAR GROVE		4100	5/29	0	.0	.0	.0
CHICKEN CREEK		4060	5/29	0	.0	.0	-
COLE CREEK PILLW		7850	6/01	SP	16.4	19.6	18.6
COMBINATION		5600	5/30	0	.0	.0	.0
COMBINATION PILLW		5600	5/30	SP	.0	.0	.0
COOK STATION		4150	5/30	37	15.4	22.1	13.3
COPPER BOTTOM		5200	6/01	0*	.0	.0	-
COPPER BOTTOM PILLW		5200	6/01	SP	.0	.0	-
COPPER CAMP		6950	6/01	0*	1.9	2.4	-
CRYSTAL LAKE		6100	6/01	0*	.0	-	-
DAVIS CREEK		5400	5/29	0	.0	.0	4.1
DEANMAN CREEK		6450	6/01	0*	.0	.0	.4
DEANMAN CREEK PILLW		6450	6/01	SP	.0	.0	.0
DESERT MOUNTAIN		5600	5/30	2	.9	-	1.4
DEVILS SLIP		8100	5/31	58	21.2	30.2	25.5
DISCOVERY BASIN		7050	5/30	0	.0	-	-
DIVIDE		7800	6/01	0*	.0	.0	-
DIXIE PILLW		7800	6/01	SP	.0	2.2	1.0
DIXIE HILL		6400	6/01	0	.0	-	.9
DRURY CREEK		4350	5/30	0	.0	-	-
DRURY CREEK PILLW		4350	5/30	SP	.0	-	-
DUTY CREEK		5500	6/01	19	9.7	14.5	9.1
FISHER CREEK		9100	5/29	72	23.2	46.5	40.1
FISHER CREEK PILLW		9100	5/29	SP	29.2	41.2	36.0
FLATTOP MOUNTAIN PILLW		6300	6/01	SP	32.9	42.6	-
FROHNER MEADOWS		6400	5/29	0	.0	.0	2.1
FROHNER MEADOWS PILLW		6400	5/29	SP	.1	.0	3.1
GARVER CREEK		4250	5/29	0	.0	.0	.1
GARVER CREEK PILLW		4250	5/29	SP	.0	.1	.0
GRAVE CREEK		4300	5/29	0	.0	.0	2.1
GRAVE CREEK PILLW		4300	5/29	SP	.0	.0	.0
GUNSLIGHT LAKE		6300	5/27	55	27.8	37.3	35.4
HARD CREEK		5030	6/01	0*	.0	-	-
HARD CREEK PILLW		5030	6/01	SP	.0	-	-
HAWKINS LAKE		6450	5/29	18	7.6	25.0	24.1
HEBERT LAKE TRAIL		4800	5/31	0	.0	-	4.1
HELL HOARING DIVIDE		5770	6/01	29	13.6	19.4	13.6
HEARIE JUNCTION		4850	5/29	0	.0	-	-
HIGHWOOD DIVIDE		5650	5/31	0	.0	.0	.5
HIGHWOOD STATION		4600	5/31	0	.0	.0	.0
HORN MEADOW		4600	5/31	6	1.2	.2	3.6
HORN BASIN		6000	5/31	50	24.8	39.2	39.0
HORN BASIN PILLW		6000	5/31	SP	22.1	-	33.0
HORN CREEK		5900	5/31	54	28.9	36.5	36.5
KINGS HILL		7500	5/30	22	7.8	12.0	11.4
LAKEVIEW RIDGE		7400	6/01	0*	.0	-	-
LENA RIDGE		8100	6/01	0*	.0	5.5	-
LENA RIDGE PILLW		8100	6/01	SP	.0	6.0	2.0
LICK CREEK		6860	5/31	3	.6	.0	1.3
LICK CREEK PILLW		6860	5/31	SP	.3	.0	.7
LOLO PASS PILLW		5230	6/01	SP	.0	-	-
LOLO PASS		5250	5/30	7	3.7	14.4	15.8
LOLO PASS		4800	5/31	0	.0	.0	.0
LOLO PASS		4900	6/01	0*	.0	-	-
LOLO PASS		4960	6/01	SP	.0	-	-
LOLO PASS		6210	6/01	0	.0	4.1	5.1
LOLO PASS		6210	6/01	SP	4.0	3.6	4.6
LOLO PASS		6400	6/01	0*	13.0	-	11.6
LOLO PASS		6400	6/01	SP	13.5	-	13.0
LOLO PASS		6040	5/30	84	41.9	51.4	43.5
LOLO PASS		6040	5/30	SP	33.7	45.6	31.3
LOLO PASS		6330	5/31	48	25.3	41.1	29.5
LOLO PASS		7400	5/30	1	.2	.4	.7
LOLO PASS		7400	5/30	SP	3.2	.0	.0
LOLO PASS		7150	6/01	10	4.4	15.6	12.2
LOLO PASS		7200	5/31	3	.8	5.6	1.0
LOLO PASS		7200	5/31	SP	.4	7.5	2.7
LOLO PASS		6650	6/01	0*	.0	-	-
LOLO PASS		6650	6/01	SP	.0	-	-
LOLO PASS		5100	5/29	3	1.6	9.1	11.9
LOLO PASS		5100	5/29	SP	8.3	10.3	10.3
LOLO PASS		6500	6/01	0*	.0	-	-
LOLO PASS		6500	6/01	SP	.0	-	-
LOLO PASS		6000	5/31	0	.0	7.8	5.4
LOLO PASS		8000	5/29	27	9.0	15.8	10.5
LOLO PASS		8000	5/29	SP	13.6	20.1	15.4
LOLO PASS		4700	5/30	0	.0	.0	.0
LOLO PASS		4700	5/30	SP	.0	.0	.0
LOLO PASS		7940	6/01	0*	14.0	29.0	22.4
LOLO PASS		7940	6/01	SP	13.0	29.6	22.5
LOLO PASS		8100	5/31	65	25.2	34.3	29.8
LOLO PASS		8100	5/31	SP	20.7	34.2	26.2
LOLO PASS		6630	6/01	0	.0	.0	1.6
LOLO PASS		7240	5/30	27	12.4	23.6	16.6
LOLO PASS		7240	5/30	SP	17.1	25.4	-
LOLO PASS		7000	5/27	0	.0	-	-
LOLO PASS		8000	6/01	0*	.0	-	1.2
LOLO PASS		8100	6/01	SP	16.5	24.1	18.2

SNOW	DRAINAGE BASIN and SNOW COURSE	Elevation	Date of Survey	THIS YEAR		PAST RECORD	
				Snow Depth (Inches)	Water Content (Inches)	Water Content (Inches)	Average
STAR LAKE E		6550	5/29	44	27.4	44.8	35.6
STAR LAKE E		9650	5/29	84	40.0	56.8	51.4
STAR LAKE E		6180	5/29	41	18.5	29.9	-
STAR LAKE E		7400	5/31	38	18.2	30.0	20.2
STAR LAKE E		8000	6/01	0*	7.0	14.0	11.9
STAR LAKE E		8000	6/01	SP	3.0	9.4	5.3
STAR LAKE E		6100	5/27	55	29.7	36.5	27.0
STAR LAKE E		6800	5/31	21	9.3	13.9	11.3
STAR LAKE E		5600	6/01	0*	.0	.0	2.6
STAR LAKE E		5600	6/01	SP	.0	.0	.9
STAR LAKE E		5580	5/27	0	.0	-	.0
STAR LAKE E		6510	6/01	0*	28.0	40.0	30.7
STAR LAKE E		6400	6/01	SP	27.0	38.6	28.1
STAR LAKE E		6200	5/27	51	23.3	28.2	24.8
STAR LAKE E		5600	6/01	0*	.0	.0	.0
STAR LAKE E		5600	6/01	SP	.0	.0	.2
STAR LAKE E		8250	6/04	25	8.6	23.0	-
STAR LAKE E		8250	6/04	SP	11.9	32.8	09.7
STAR LAKE E		5450	5/29	22	10.9	25.7	20.6
STAR LAKE E		6700	6/01	SP	.0	.0	.0
STAR LAKE E		6800	6/01	0*	.0	2.5	2.0
STAR LAKE E		6800	6/01	SP	.0	.0	1.7
STAR LAKE E		6700	5/30	58	25.4	38.4	27.6
STAR LAKE E		8700	5/30	SP	17.5	26.5	21.0

## ADDITIONS AND CORRECTIONS TO PREVIOUSLY PUBLISHED DATA

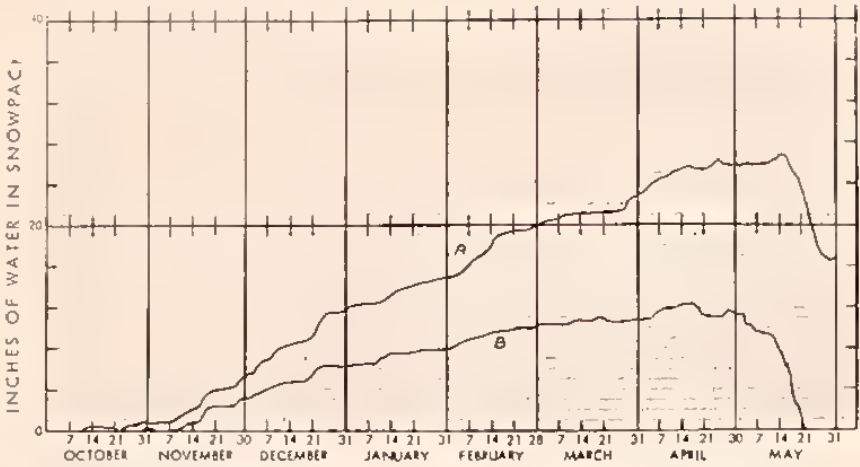
Many of the snow survey measurements published in the Water Supply Outlook have been telephoned into the Snow Survey Office. Sometimes the original notes are not received in time to check additions and subtractions. Also, some surveys are made too late for the information to be published.

This table shows the additional and corrected data for 1979 snow surveys. The underlined value is the corrected data. Data not underlined was not previously published.

SNOW	DRAINAGE BASIN and/or SNOW COURSE		THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (Inches)	
	NAME	Elevation				Last Year	Average
JANUARY 1							
Basin Creek	7180	12/27	18	3.2	2.9	-	
Fourth of July	3450	1/02	21	4.7	-	-	
Friday Hill	4620	1/02	25	6.6	-	-	
Newton Mountain <sup>1</sup>	5600	1/02	32	8.9	-	-	
Ten Mile Lower	6600	12/29	28	5.6	5.2	2.8	
Waldron	5600	1/06	26	6.6	-	-	
Waldron Pillow	5600	1/06	SP	5.9	7.5	4.8	
Whiskey Creek Pillow	6800	1/04	SP	7.5	9.9	-	

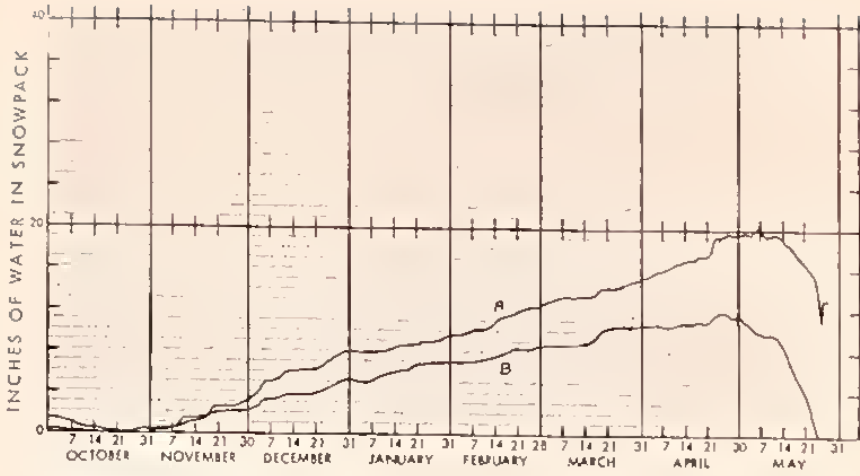






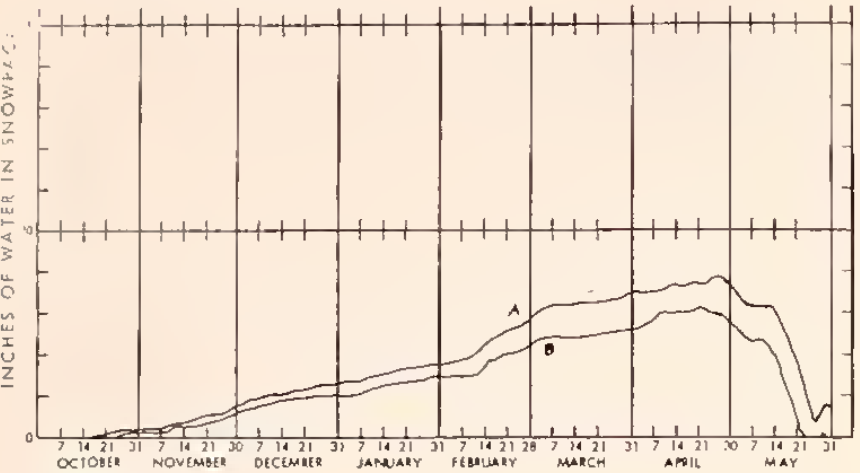
LITTLE BELT MOUNTAINS

- A Spur Park, elevation 8,100 ft.
- B Deadman Creek, elevation 6,450 ft.



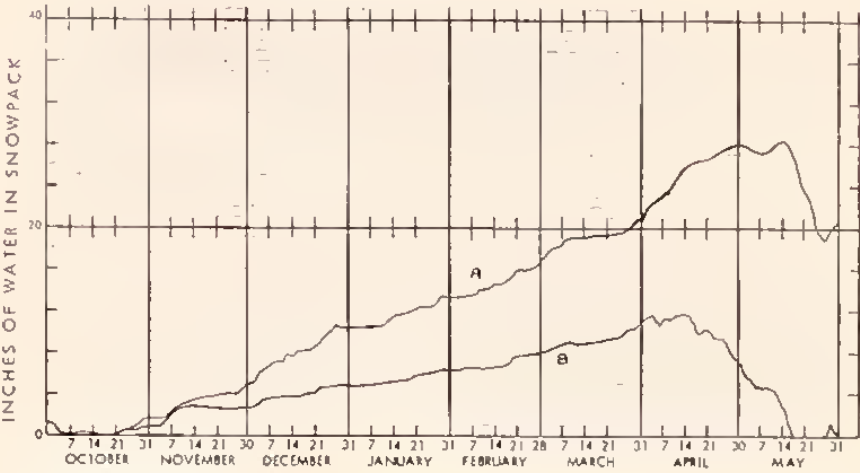
CONTINENTAL DIVIDE

- A Rocker Peak, elevation 8,000 ft.
- B Frohner Meadow, elevation 6,480 ft.



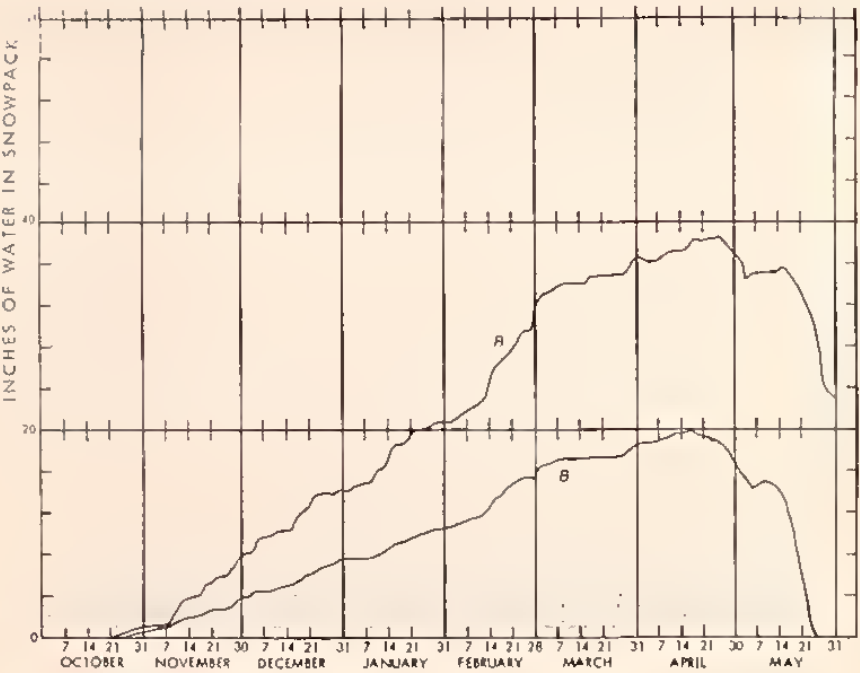
GRAVELLY RANGE

- A Tepee Creek, elevation 8,000 ft.
- B Divide, elevation 7,800 ft.



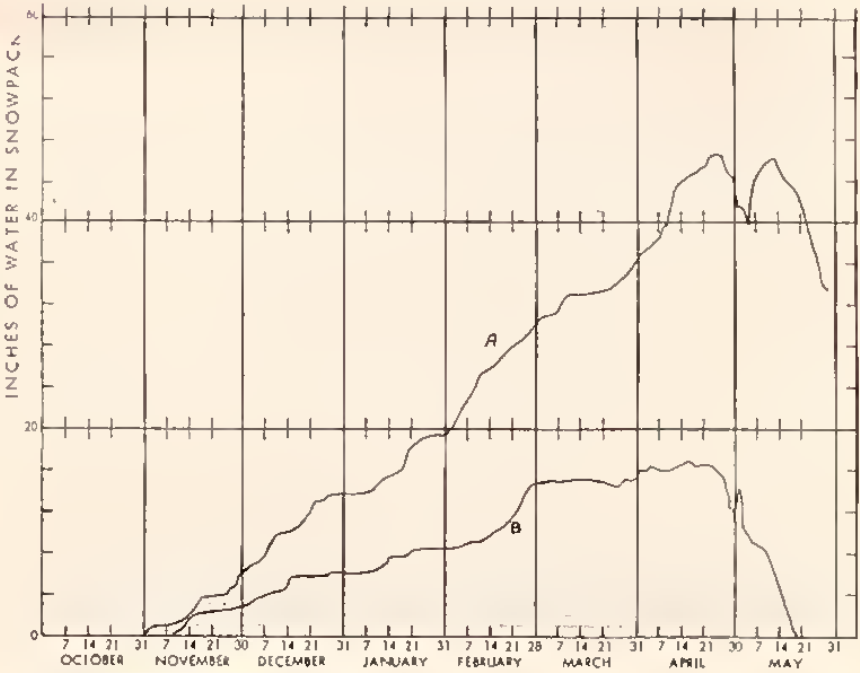
GALLATIN RANGE

- A Shower Falls, elevation 8,100 ft.
- B Lick Creek, elevation 6,860 ft.



MADISON PLATEAU

- A Black Bear, elevation 7,950 ft.
- B Whiskey Creek, elevation 6,800 ft.



SWAN & FLATHEAD RANGES

- A Noisy Basin, elevation 6,150 ft.
- B Emery Creek, elevation 4,350 ft.

AGENCIES AND ORGANIZATIONS COOPERATING IN MONTANA SNOW SURVEYS

GOVERNMENT AGENCIES

Canada

Water Survey of Canada, Calgary, Department of the Environment  
Water Resources Service, Department of Lands, Forests and Water Resources,  
British Columbia  
Alberta Environment, Edmonton, Alberta

Federal

Department of the Army - Corps of Engineers  
Department of Agriculture - Forest Service  
- Soil Conservation Service  
Department of Commerce - NOAA  
- National Weather Service  
Department of Interior - Bonneville Power Administration  
- Bureau of Indian Affairs  
- Bureau of Reclamation  
- Fish and Wildlife Service  
- Geological Survey  
- National Park Service

STATE AGENCIES

Montana Conservation Districts  
Montana Department of Fish and Game  
Montana Department of Natural Resources and Conservation  
Montana State University - Agricultural Experiment Station  
University of Montana - School of Forestry  
DNRC - State Forester

PRIVATE ORGANIZATIONS AND INDIVIDUALS

Butte Water Company  
Montana Power Company  
The Anaconda Company  
Big Sky of Montana  
Jack & Scott Graveley  
Arthur Christensen  
Jack Fenton

